REMARKS

Claims 1, 5, 9 and 13 have been canceled. Entry of the amendments is respectfully requested as placing this case in condition for allowance.

Review and reconsideration on the merits are requested.

Claims 1-8 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,495,127 to Aota et al. Aota et al was cited as disclosing a three-phase starter/generator 3 controlled by switching power control unit 5, so as to apply braking to prevent speed overshooting at starting (citing col. 5, line 55 - col. 6, line 38). Additionally, claims 9 and 13 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 6,291,902 to Ogane et al. Ogane et al was cited as disclosing motor/generator 2 controlled by power control unit 12 so as to apply braking to prevent speed overshooting prior to reaching idling speed (citing col. 5, line 51 to col. 6, line 19).

Claims 10-12 and 14-16 were also rejected under 35 U.S.C. §103(a) as being unpatentable over Aota et al in view of Ogane et al. As above, the Examine relied on Ogane et al as teaching that it is known to control a motor/generator at starting so as to apply braking to prevent speed overshooting prior to reaching idling speed.

Applicants traverse, and respectfully request the Examiner to reconsider for the following reasons.

A common characteristic feature of remaining independent claims 2, 6, 10 and 14 is the feature of generating a negative torque in breaking control by effecting short-circuiting between

phases of the three-phase armature coils. The subject limitation as claimed in claim 2 is representative, and is reproduced below.

> wherein the controller causes the starter/battery charger to generate negative torque in the breaking control by effecting short-circuiting between phases of the 3-phase armature coils of the starter/battery charger, to thereby prevent the overshoot and the rotation speed of the internal-combustion engine.

By virtue of the above-noted characteristic feature, the present invention provides the following advantages effects.

(a) A breaking control is given by the starter/battery charger generating a positive starter torque to the engine at the engine starting state. Therefore, additional apparatus is not needed for breaking control.

(b) A generating break control is known for breaking control instead of effecting short-circuiting. The generating break control will be given by controlling the starter/battery charter to generating condition. However, the generating break control by the starter/battery charger cannot provide a stabilized negative torque. This is because its negative torque value may change depending on the charging state of the battery and the electric load state for the battery. On the other hand, breaking control by effecting short-circuiting provides a stabilized negative torque despite the charging state of the battery and the electric load state for the battery.

(c) A negative torque value by effecting short-circuiting may be controlled. Typically, the negative torque value can be controlled by controlling the

field current such as described for embodiment 4 of the present invention (Figs. 5 and 6 of the specification).

(d) Effective short-circuiting can be obtained by changing the switching time for a switching element in inverter 41 such as in embodiment 2 (Fig. 3 of the specification). Accordingly, switching from positive torque to negative torque is made in short time.

The Examiner cited Fig. 2 and the disclosure at col. 3, lines 26-38 of Aota et al as disclosing transistors in inverter circuit 51 positioned to short circuit armature coils 32.

However, Fig. 2 of Aota et al shows a three-phase inverter circuit, including inverters 5u, 5v and 5w, where each output terminal of the armature coil 32 is connected between different pairs of series-connected NPN transistors. None of the inverters are configured to short circuit between phases of three-phase armature coils as required by the present claims.

That is, none of the cited prior art teaches, suggests or otherwise discloses the feature of generating a negative torque in breaking control be effecting short-circuiting between phases of the three-phase armature coils as required by the pending claims.

Withdrawal of all rejections and allowance of claims 2-4, 6-8, 10-12 and 14-16 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Date: April 6, 2005